

### REMARKS/ARGUMENTS

In the application, Figures 1 and 2 have been amended to add previously omitted SEQ ID NOs. Furthermore, the description of the abbreviations in Figure 1 has been removed.

The figure legend of Figure 1 has been amended to include reference to SEQ ID NO's, and organism identifiers that were removed from Figure 1. Paragraphs on pages 16 and 47 have been amended to correct minor typographical errors.

The sequence listing for SEQ ID NO:21-53 has been amended to define <213> as "Artificial", and to add lines <220> and <223>.

The sequence listing of SEQ ID NO: 42, which was incorrectly input in 3' to 5' orientation (see Example 1-4, page 31) was also amended so that it now reads in the 5' to 3' direction.

The sequence listing of SEQ ID NO:47 was amended to add 12 nucleotides to the 3' end of the listing. Support for this amendment may be found on page 36, Example 1-10, where the complete sequence description for **TX-144-1R**, listing the 66 nucleotide sequence is provided.

New sequence listings for SEQ ID NO:55-71 have been added. Support for these sequences can be found throughout the specification as follows:

- SEQ ID NO:55 lists the complete sequence for Trx-H-11D-ML-AHCAE-RR. This sequence described in Table 2, page 19. The construction of this sequence is outlined in Example 1-14; page 39;
- SEQ ID NO: 56 and 57 – Example 1-2, page 29, listing the nucleotide sequence (SEQ ID NO: 56) and associated amino acids of the first 30 amino acids (SEQ ID NO: 57) of TrX-HML;
- SEQ ID NO: 58 – Example 1-4, page 31, listing the amino acid sequence for TX-105R-1;
- SEQ ID NO: 59 – Example 1-4, page 31, listing the amino acid sequence for TX-C1;

- SEQ ID NO: 60 – Example 1-5, page 32, listing the amino acid sequence for TX-75A-1;
- SEQ ID NO: 61 – Example 1-5, page 32, listing the amino acid sequence for TX-75-1;
- SEQ ID NO: 62 – Example 1-6, page 33, listing the amino acid sequence for TX-125A129E-1;
- SEQ ID NO: 63 – Example 1-7, page 34, listing the amino acid sequence for TX-105H-1;
- SEQ ID NO: 64 – Example 1-9, page 35, listing the amino acid sequence for TX-del(123-144)-1r;
- SEQ ID NO: 65 – Example 1-9, page 35, listing the amino acid sequence for TX-N1;
- SEQ ID NO: 66 – Example 1-10, page 36, listing the amino acid sequence for TX-144R-1r;
- SEQ ID NO: 67 – Example 1-11, page 37, listing the amino acid sequence for TX-161R-1r;
- SEQ ID NO: 68 – Example 1-12, page 38, listing the amino acid sequence for TX-116G-1;
- SEQ ID NO: 69 – Example 1-12, page 38, listing the amino acid sequence for TX-118C-1;
- SEQ ID NO: 70 – Example 1-14, page 39, listing the amino acid sequence for TX-10H11D-1;
- SEQ ID NO: 71 – Example 1-16, page 41, listing the amino acid sequence for TX-116G118C-1;

Paragraphs on pages 29 to 41 have been amended to include these new SEQ ID NOs.

Also enclosed is a diskette containing the Sequence Listing for this application in computer readable form (CRF) and a paper copy of the Sequence Listing in compliance with 37 C.F.R. §§ 1.821-1.825. Applicants hereby certify that the information in both the computer readable form and the paper copy of the Sequence Listing enclosed herewith is the same and includes no new matter.

The enclosed computer readable copy and paper copy of the Sequence Listing are believed to bring the Sequence Listing into full compliance with the sequence rules. Therefore, entry of the Sequence Listing is respectfully requested.

Claim 1 has been amended to indicate that the substituted amino acid at position 11, 116, 118, 144 and 161 are an acidic, a non-polar, a Cys, a first basic, and a second basic amino acid respectively. Corresponding amendments have been made in claim 4, 9, 13, 14, 18, 22, 23, 27, 31, 32, 37, 40, 41 and 44. Support for these amendments may be found for example on page 21, line 1 to the end of page 25.

Claims 5-7, 10, 11, 15, 16, 18-20, 24, 25, 28, 29, 33, 34, 38, 39, 42, 43, 45, 58, 60, 62 and 64-66 have been amended to ensure a consistent use of antecedents in the claims and to make minor formality-type amendments.

Claim 48 has been amended to recite a method step. Support for this amendment can be found at page 1, 3<sup>rd</sup> paragraph.

Claim 49 has been amended to specify TrX-H-11D-ML-75A105H-118C-125A129E-144R161R (SEQ ID NO: 55).

Claims 57, 59, 61 and 63 have been amended for consistency with claim 1 from which they depend.

Claims 67-71 have been added. Support for new claims 67-71 can be found throughout the specification (for example, see page 20, paragraph 2 to page 24, first full paragraph).

Claims 1, 4, 7, 9, 13-14, 18, 22-23, 27, 31-32, 37, 40-41, 44, 48-49, 56-57, 59, 61, and 63 have been amended. Claims 3, 8, 17, 26, 35-36, 47 and 50-55 have been cancelled without

prejudice or disclaimer. Claims 1-2, 4-7, 8-16, 18-25, 27-34, 37-46, 48-49, and 56-71 remain in this application.

**Election/Restriction**

Applicant wishes to thank Examiner for the teleconferences on October 15, 2003 and October 24, 2003. At the time of the interview, the Examiner agreed to include an examination of the following claims and make the next Office Action non-final. Below is an outline of what was discussed in the interview.

Applicant submits that, of the claims remaining in the present application, claims 1-2, 4-7, 8-16, 18-25, 27-34, 37-46, 48, and 56-71 are drawn to the same invention and should be examined together. Applicant submits that, given the present amendments, claim 1 represents a generic claim. Claims 2, 4-7, 8-16, 18-25, 27-34, 37-46, 48, and 56-71 identify limitations within claim 1, and define variations of the generics disclosed. Therefore, these claims should be considered generic claims.

**Rejection under 35 U.S.C. § 112**

Claims 47-48 have been rejected under 35 USC 112 as being indefinite, and under 35 USC 101 as being directed to a use.

Applicant has cancelled claim 47 without prejudice or disclaimer. Claim 48 has been amended to be directed to a method, and to recite a step as requested by Examiner. Support for this amendment can be found at page 1, 3<sup>rd</sup> paragraph. Reconsideration of the rejection to claims 47 and 48 under 35U.S.C. 112 is respectfully requested.

**Rejection under 35 U.S.C. § 102**

Claims 1-2 and 47-48 are rejected under 35 USC 102(e), alleging that WO 01/92487 discloses the subject matter of the claims. Applicant respectfully disagrees.

Applicant notes that the date of publication of WO 01/92487 is December 6, 2001. This date is after the filing date of the present application (November 21, 2001). Furthermore, the Inventor (Wing L. Sung) and Applicant (National Research Council of Canada) for the present application (See Assignment registered 02/25/2002 on Reel 012657, Frame 0447) are the same as those of the cited prior art document (WO 01/92487). Thus, Applicant submits that the prior PCT application, which designates the United States, was not filed "by another" as required under 36 USC 102(e), and that the WO 01/92487 reference is not applicable to the subject matter of the present claims.

Claim 50 is rejected as being anticipated by Kimura *et al* under 35 USC 102(a), or by Yoshino *et al* under 35 USC 102(b). Examiner states that Kimura *et al* disclose a mutant xylanase in which the amino acids corresponding to positions 116 and 118 are different. Applicant notes that, in Kimura *et al* only the amino acid at position 116 is different, while the amino acid at position 118 is the same as that of SEQ ID NO: 16. Examiner also stated that Yoshino *et al* disclose a mutant xylanase having different amino acids at positions 144 and 161. Applicant notes that in Yoshino *et al* amino acids at positions 144 and 161 are the same as those of SEQ ID NO:16. However, amino acids at position 116 and 118 are different. Applicant submits that Kimura *et al* disclose a xylanase having an Asn at position 116 while Yoshino *et al* show a xylanase having Thr at position 116 and Ala at position 118.

Applicant further notes that in the present amendment claim 50 has been cancelled without prejudice or disclaimer. Applicant submits that Examiner's rejection to claim 50 in view of Kimura *et al* or Yoshino *et al* is rendered moot.

For the sake of completeness Applicant further notes that Claim 1, as currently amended, describes a modified xylanase having at least one amino acid substitution selected from the group consisting of substitution to an acidic amino acid at position 11, a non-polar amino acid at position 116, a Cys at position 118, a basic amino acid at position 144, and a basic amino acid at position 161. Support for this amendment can be found at page 20, paragraph 2 to page 24, first full paragraph.

Applicant maintains that Kimura *et al* does not disclose a non-polar amino acid at position 116, but rather Asn (polar amino acid). Similarly, Yoshino *et al* does not disclose a non-polar amino acid at position 116 or a Cys at position 118, but rather shows Thr at 116 and Ala at 118. Applicant submits that Kimura *et al* and Yoshino *et al* do not teach the invention as disclosed in claim 1.

In light of the above comments and amendments, Applicant requests the withdrawal of the Examiner's rejections and the reconsideration of the present claims.

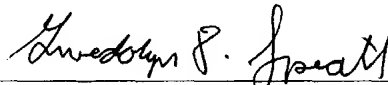
Pursuant to the above amendments and remarks, reconsideration and allowance of the pending application is believed to be warranted. The Examiner is invited and encouraged to directly contact the undersigned if such contact may enhance the efficient prosecution of this application to issue.

ATTORNEY DOCKET NO. 07121.0003U1  
Application No. 09/990,874

A Request for Extension of Time and Credit Card Form PTO-2038 authorizing payment in the amount of \$950.00 (extension of time fee – large entity) are enclosed. No additional fees are believed due. However, the Commissioner is hereby authorized to charge any deficiency or to credit any overpayment to Deposit Account No. 14-0629.

Respectfully submitted,

NEEDLE & ROSENBERG, P.C.

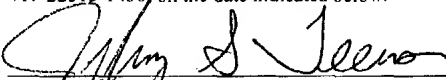


Gwendolyn D. Spratt  
Registration No. 36,016

NEEDLE & ROSENBERG, P.C.  
Customer Number 23859  
(678) 420-9300  
(678) 420-9301 (fax)

CERTIFICATE OF EXPRESS MAILING UNDER 37 C.F.R. § 1.10

I hereby certify that this correspondence, including any items indicated as attached or included, is being deposited with the United States Postal Service as Express Mail, Label No. EL 992019265 US, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date indicated below.

  
Jeffrey S. Teems

1-15-04  
Date